

CLAIMS:

We claim:

1. A method for removing material from a high speed, moving substrate, comprising:

supplying a moving substrate having at least one first portion and at least one second portion;

substantially severing the first portion from the second portion utilizing a cutter;

nipping the first portion between a movable mechanical finger and a movable complementary surface; and

moving the second portion away from the first portion while the first portion is maintained in contact between the movable mechanical finger and the movable complementary surface.

2. The method of claim 1 wherein the first portion is a trim portion and the second portion is a product portion.

3. The method of claim 2 wherein the trim portion is at least one continuous web.

4. The method of claim 2 wherein the trim portion is at least one discrete piece.

5. The method of claim 2 further comprising the step of directing the trim portion towards a trim transporter.

6. The method of claim 1 wherein the first portion is a product portion and the second portion is a trim portion.

7. The method of claim 1 wherein the first portion is a first product portion and the second portion is a second product portion.

8. The method of claim 1 wherein the severing step results in an incomplete cut and the moving step includes tearing the first portion from the second portion at the incomplete cut.
9. The method of claim 8 wherein the incomplete cut results in more than one point of connection remaining between the first portion and the second portion, and wherein the points of connections are torn apart sequentially as the second portion moves away from the first portion.
10. The method of claim 1 wherein the severing step occurs essentially simultaneously with the nipping step.
11. The method of claim 1 wherein the cutter is selected from the group consisting of saw cutter, shear cutter, laser cutter, gas cutter, water cutter, ultrasonic cutter, arc cutter, interference cutter and combinations thereof.
12. The method of claim 1 wherein the movable complementary surface is at least one second mechanical finger.
13. The method of claim 1 wherein the cutter is a rotatable knife roll and the movable complementary surface is a rotatable anvil roll.
14. The method of claim 13 wherein the rotatable anvil roll has an outer surface having at least one recess configured to receive the mechanical finger during the nipping step.
15. The method of claim 13 wherein the rotatable knife roll has an outer surface having at least one recess configured to receive the mechanical finger before the nipping step.
16. The method of claim 14 wherein the outer surface has a surface speed and the mechanical finger has a finger speed essentially the same as the surface speed.
17. The method of claim 15 wherein the outer surface has a surface speed and the mechanical finger has a finger speed essentially the same as the surface speed.
18. The method of claim 1 wherein the cutter is a rotatable knife roll and the movable complementary surface is the rotatable knife roll.

19. The method of claim 18 wherein the rotatable knife roll has an outer surface having at least one recess configured to receive the mechanical finger during the nipping step.
20. The method of claim 18 further comprising an anvil roll having an outer surface with at least one recess configured to receive the mechanical finger before the nipping step.
21. The method of claim 19 wherein the outer surface has a surface speed and the mechanical finger has a finger speed essentially the same as the surface speed.
22. The method of claim 20 wherein the outer surface has a surface speed and the mechanical finger has a finger speed essentially the same as the surface speed.
23. The method of claim 1 wherein the movable complementary surface is a belt.
24. The method of claim 1 wherein the cutter is an ultrasonic horn and the movable complementary surface is a movable ultrasonic anvil roll.
25. The method of claim 1 wherein the cutter is a rotatable ultrasonic horn roll and the movable complementary surface is the rotatable ultrasonic horn roll.
26. An apparatus for removing material from a high speed moving substrate comprising:
- a cutter adapted to substantially sever a moving substrate into at least one first portion and at least one second portion;
  - a movable complementary surface; and
  - at least one movable mechanical finger configured to contact the first portion of the moving substrate and wherein the movable mechanical finger is configured to nip the first portion in coordination with the movable complementary surface as the second portion moves away from the first portion.
27. A method of removing material from a high speed moving substrate while minimizing disruption to the substrate, comprising the steps of:

substantially severing a moving substrate into at least one first portion and at least one second portion as the substrate moves along a substrate path;

contacting the first portion with at least one movable mechanical finger;

nipping the first portion between the movable mechanical finger and a movable complementary surface;

maintaining the first portion under positive control; and

separating the second portion from the first portion as the second portion continues along the substrate path.

28. A method of removing material from a moving substrate using primarily the energy from the moving substrate, comprising the steps of:

substantially severing a moving substrate into at least one first portion and at least one second portion as the substrate moves along a substrate path, wherein the substrate has a web energy;

contacting the first portion with at least one movable mechanical finger;

nipping the first portion between the movable mechanical finger and a movable complementary surface;

maintaining the first portion under positive control; and

separating the second portion from the first portion using primarily the web energy.